

carries great weight, feels that they can. Others differ with him and would explain some of the cases as due to increased vagus tone. In support of this contention is the occasional relief of the block by the use of atropin and also the well known fact that vagal stimulation is capable under some conditions of causing heart block. Probably though this does not occur unless the auriculoventricular node and bundle are already damaged by disease. The weight of evidence is certainly in favor of an organic basis for all cases.

The real importance of the recognition of these cases of acute heart block lies in the fact that through them we have definite evidence of the involvement of the myocardium in the disease process and in many instances this is the only evidence that the infection has spread beyond its original confines and has invaded the heart. The involvement of the auriculoventricular node and bundle is of course only part of the general myocardial invasion; through knowledge of its specialized function we are able to recognize disturbances in it.

In place of involvement of the auriculoventricular node or bundle we may have damage to one or other branch of the bundle. This alone does not cause any irregularity of the pulse and without the aid of the electrocardiograph cannot be detected. The only physical sign that may accompany it is a decided reduplication of the first heart sound. Disease of one bundle branch is usually a chronic process but it may occur as a manifestation of acute infection, and when it can be recognized it has the same significance as true block.

In conclusion one may say that heart block occurs not infrequently as a manifestation of acute infectious disease. Probably a good many cases are unrecognized because of their very mild and transient nature. In many cases the disturbance has been proven to depend on definite organic changes; probably the majority if not all cases are to be explained on a similar basis. Partial heart block may be the sole manifestation of involvement of the heart in the acute infection.

Bibliography.

The following references embrace most of the reported cases of acute heart block. The list, however, is not exhaustive.

- Armstrong. Brit. Med. Jour., 1910, I, 20.
 Barringer. Arch. Int. Med., 1909, IV, 186.
 Bramwell. Brit. Med. Jour., 1909, I, 995.
 Butterfield. Heart, 1912, III, 203.
 Cowan, McLeod & Paterson. Quart. Jour. Med., 1910, III, 115.
 Dunn. Jour. A. M. A., 1908, L, 1985.
 Esmein, Pezzl & Donzelot. Arch. d. Mal. d. Coeur, 1914, VII, 323.
 Fleming & Kennedy. Heart, 1910, II, 77.
 Gallavardin & Pallasse. Arch. d. Mal. d. Coeur, 1914, VII, 310.
 Gerhardt. Deutsch. Arch. f. klin. Med., 1908, XXIII, 458.
 Gerhardt. Deutsch. Arch. f. klin. Med., 1912, CVI, 462.
 Gosse. Brit. Med. Jour., 1914, I, 1347.
 Gunson. Brit. Jour. Childs. Dis., 1914, XI, 385.
 Hay. Brit. Med. Jour., 1910, I, 20.
 Hecht. Wien. med. Wochenschr., 1914, LXIV, 177.
 Hellhecker (quoted by Hecht) Frankfurt. Zeitschr. f. Pathol., 1911, VIII, 319.
 Hume & Clegg. Quart. Jour. Med., 1914, VIII, 1.
 James. Amer. Jour. Med. Sci., 1908, CXXXVI, 469.
 Jellinek & Cooper. Brit. Med. Jour., 1908, I, 796.
 Joachim. Zeitschr. f. klin. Med., 1907, LXIV, 95.
 Joachim. Deutsch. Arch. f. klin. Med., 1907, LXXXVIII, 574.
 Koetzie. Muench. med. Wochenschr., 1914, CXI, 2064.
 Lewis. Brit. Med. Jour., 1913, I, 484.
 MacKenzie. Brit. Med. Jour., 1902, II, 1411.

- Magnus-Alsleben. Zeitschr. f. klin. Med., 1910, CXIX, 82.
 Naish. Quart. Jour. Med., 1914, VIII, 33.
 Neuhof. Amer. Jour. Med. Sci., 1913, CXLV, 513.
 Pardee. Arch. Int. Med., 1913, XI, 641.
 Peabody. Arch. Int. Med., 1910, V, 252.
 Pick. Verhandl. d. deutsch. Kong. f. inner. Med., 1913, XXX, 511.
 Price & MacKenzie. Heart, 1912, III, 233.
 Rihl. Zeitschr. f. exper. Patho. u. Ther., 1905-6, II, 83.
 Routier. Arch. d. Mal. d. Coeur, 1914, VII, 316.
 Schuster. Deutsch. med. Wochenschr., 1896, XXII, 484.
 Taylor. Jour. A. M. A., 1908, L, 1246.
 Zwaluwenburg. Arch. Int. Med., 1911, VIII, 141.

PITFALLS IN THE DIAGNOSIS OF RENAL LITHIASIS.*

By MARTIN KROTOSZYNER, M. D., San Francisco.

In spite of the great strides made in the correct preoperative recognition of surgical renal lesions, and in spite of the many exact methods of examination by which renal surgery of late has advanced to an almost marvelous degree, the diagnosis of surgical kidney lesions is, nevertheless, in many instances very difficult and, not rarely, entirely impossible. The application of the majority or even of all of the many exact methods of examination at our disposal to-day does not always give reliable results of truly pathognostic value. The hidden position of the kidney renders palpation difficult and may, on account of the manifold relations of the kidney to important neighboring organs, render it a procedure of doubtful and misleading diagnostic character. Chemical urinalysis, so valuable in internal medicine, is of no material aid in the majority of surgical renal lesions. Cystoscopy and radiography will at times fail to give exact data, and especially the latter method may occasionally lead to erroneous conclusions; determination of renal function, moreover, by many renal surgeons heralded as unimpeachable evidence in renal diagnosis, is almost valueless in the absence of a marked relative functional discrepancy, and even the most modern diagnostic method, pyelography may, in many instances, fail to furnish a clew to the correct diagnosis.

These remarks are not written in a pessimistic attitude of mind, inclining towards minimizing the value and efficacy of our modern armamentarium in renal diagnosis; for the old adage, "*qui bene diagnoscitur, bene curabit*," is nowhere in the realm of medical science more appropriately applicable than to renal surgery. The many noteworthy observations on clinical renal lesions, which are recorded in the literature since the first kidney was removed by Gustav Simon, have obtained their real and intrinsic scientific value on the basis of a thorough knowledge of modern diagnostic methods, and the preoperative diagnosis of renal lesions, therefore, stands to-day on a much firmer scientific basis than formerly. Thus it occurs that the diagnostic exposure of the kidney, which up to a short time ago was practiced by many surgeons as a procedure of choice, is to-day a method of last resort which is considered permissible in exceptional cases only.

The diagnosis of nephrolithiasis seems at present a simple procedure on the basis of the evidence furnished by radiography and is undoubtedly easily

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accomplished, in many instances, by the general practitioner. There is, nevertheless, no other pathological condition in renal surgery so liable to offer diagnostic pitfalls as renal lithiasis. A few facts should therefore be borne in mind by the surgeon in order to avoid grave diagnostic errors:

1. A kidney may for a long period of time contain one or more stones of large size, occupying a position in the renal pelvis extending into the calyces, without causing any subjective and only such slight objective symptoms that the existence of nephrolithiasis is either entirely overlooked or not suspected.

A large pyonephrotic stone kidney was removed from a man of 52, who had been treated at various hands for stone in the bladder. All his symptoms had pointed to the bladder, in which the cystoscope revealed two small concretions. On account of the microscopic findings of numerous pus-cells, an infection of the upper urinary tract had been suspected, which was traced to the right kidney, and radiography demonstrated several characteristic calculi-shadows in the region of the right kidney.

2. In the presence of one or more calculi in the kidney, pain may exist in the opposite organ. This phenomenon is elicited by the reno-renal reflex exerted from the diseased to the healthy organ.

A remarkable specimen of a left-sided pyonephrotic stone-kidney, which originally contained so many calculi that they could not be replaced into the opened kidney, was removed from a man of 45, who came under observation with vague symptoms of a moderate pyuria and occasional painful sensations of indefinite character in the back and right-kidney region.

3. Pain may be of such vague nature and location as not to suggest its being in any way connected with the diseased organ.

A large pyonephrotic stone-kidney was removed from a woman of 55, who had complained of various neurasthenic paresthesias, including vague pains in the back, which for many years had been treated as lumbago. No subjective or objective symptom pointing to a lesion of the urinary tract had existed except a moderate pyuria. A careful urological investigation including radiography demonstrated at once the correct diagnosis.

4. Pain due to nephrolithiasis may be so referred by the patient that a disease of another organ is diagnosed.

A woman of 30 with severe pyuria and typical attacks of right-sided colic, showed radiographically two small well-defined shadows on the right side of the spinal column at the point of an ureteral impediment on that side, and apparently in the course of the ureter, as ascertained by a shadow-casting ureter catheter. At the operation the ureter was found to be imbedded in dense adhesions, particularly at the point of its crossing with the ext. iliac; in the attempt to free the channel from adhesions, the peritoneal cavity was opened, and a long and tortuous appendix was found to be a part of the dense adhesions to the ureter. In the center of the opened appendix fecal concretions, which corresponded to the shadows on the plate, were found.

5. In every case of long-standing pyuria, with negative findings for tuberculosis, the possibility of an existing calculous pyonephrosis, though suggestive renal symptoms may be entirely absent, should be considered and either verified or ruled out by a thorough radiographic examination of the upper urinary tract. The following case will illustrate this point:

A man of 40 entered the hospital with a severe pyuria, which was supposed to be due to a long-standing vesico-rectal fistula, acquired through a prostatic abscess in the course of a severe gonorrheal infection. The patient could only evacuate his bladder in a sitting posture, all of his urine in this way escaping through the rectum. Before operating on the fistula it was deemed necessary to rule out, by cystoscopic means, a possible ascending infection of the upper urinary tract. This examination, which was accomplished with great difficulty, demonstrated an infection and a marked functional deterioration of the right kidney. The diagnosis of right-sided pyonephrosis through ascending infection seemed to be so obvious that an X-ray examination was omitted prior to nephrectomy. The removed kidney, on being opened, was found to be filled with calculi of various size and configuration.

An aseptic right-sided nephrolithiasis had existed in this case before the onset of the lesion in the lower urinary tract, by which, in all probability, infection of the stone-kidney was caused.

6. In doubtful cases pyelography may clear up the diagnosis. Occasionally a stone, which does not appear on the plate, obtained by ordinary radiography, may be demonstrable through pyelographic exposure.

An extremely stout and fleshy man of 46, with a severe right-sided renal pyuria, and negative laboratory and guinea-pig findings as regards tuberculosis, showed on the renal plate upon ordinary radiography no evidence of a stone-shadow on the affected side, while, later on, two pyelograms, made at different sittings, demonstrated a distinct round shadow occupying the upper calyx, which on account of its difference in intensity was interpreted as a concrement-shadow.

7. Calcified tubercular foci within the renal parenchyma may on the plate look exactly like calculus-shadows.

A man of 41 entered the hospital in a state of anuria and complete uremic coma. Radiography showed two distinct shadows in the region of the right kidney, which were interpreted as calculus-shadows, but which, on exposure of the kidney, were found to be due to calcified tubercular foci.

8. An apparently typical stone-shadow may be cast on the renal plate by an object outside the kidney.

A characteristic stone-shadow was observed on the left renal plate of a young man who was under observation at the hospital on account of typical attacks of left-sided renal colic. At the operation nothing abnormal was found in the left kidney, while a tuberculous lymph-gland, corresponding in size and configuration to the shadow on the plate, was removed.

9. Small renal stones with rough surfaces (uric acid stones, or urates), which occasionally are not demonstrable on the plate, may cause a symptom-complex (severe hematuria, etc.), pointing to a grave kidney lesion (tuberculosis, malignancy).

A man of 80 came under observation on account of intermittent attacks of hematuria, which cystoscopically could be traced to the left kidney. On account of an apparently palpable enlargement of that organ, a renal tumor was assumed to be the cause of the hematuria, which, though, at the post-mortem examination was found to be actually due to a small and rough uric acid stone located in the lower calyx near the renal pelvis.

10. In cases where stone-shadows are present on renal plates of both sides, the existence of a fused or horse-shoe kidney should be borne in mind. Several such cases have been recorded in the literature of late, the last one by Lund of Boston in a recent report of the meetings of the New England Branch of the American Urological Association. I wish, in this connection, to report the following rare observation:

A man of 32 entered the hospital on account of severe pyuria connected with pain in the right flank, and septic fever. No important data as regards previous affections of the genito-urinary tract could be elicited from the history. Cystoscopy demonstrated a moderate subacute cystitis; both ureter catheters can be carried to the renal pelvis, but no urine is obtained from the right, and very little urine from the left catheter. Finally, after several cystoscopic sittings, a few drops of a very purulent fluid are withdrawn by suction from the right ureter catheter; the functional and microscopic comparative examination gave the following result:

R.	L.
Sugar (after Phloridzin)	
0.	0.1
Urea 0.001	0.031
Microscop: Almost pure pus; a few small round epithelial cells.	A few pus cells, small round epithelial cells, many blood cells.

Daily urine quantity about 1500 cc., daily quantity of urea between 15 and 25 grams. Irregular septic temperature between 100° and 102° F. Palpation of kidneys negative. Radiography shows typical calculus-shadows in both kidney regions almost symmetrically to the left and right of the second lumbar vertebra, a little below the 12th rib, and suggestive of being located in or near the renal pelvis. Pyelography did not materially aid the diagnosis, as almost all of the injected silver-solution ran back into the bladder.

Upon these findings the diagnosis of bilateral nephrolithiasis, with secondary infection and destruction of the right kidney (pyonephrotic stone kidney) was made. For obvious reasons the drainage of the right organ was considered the first and most imperative operative procedure.

Operation: Lumbar incision on right side. Upper pole easily freed, luxation of lower pole seemed impossible, therefore incision enlarged; the right kidney is now found to extend deeply to the left side of the abdomen toward the bony pelvis.

The kidney is finally brought up into the incision and found to be a fused or double kidney measuring 42 cm. in width, its right half is almost entirely represented by a sack filled with muco-pus, while its left half appears to be fairly normal. No line of cleavage between the two halves, which showed independent renal vessels and ureters. A calculus of the size of a large olive-pit is felt in the renal parenchyma just above the pelvis in either half of the kidney and removed by small incisions, which are afterwards closed with catgut sutures. The pyonephrotic sack of the right side is incised, emptied and drained by a rubber-tube. The kidney is replaced and cigarette-drains placed at the lower and upper poles of the incision.

Closure of wound by layers.

The following notes were taken three days after the operation: Patient rallied well from the operation. Temperature 99°, pulse 100, volume fair, general condition good. Only a few ounces of purulent urine are thus far obtained by catheter. Bandages wet.

All efforts, though, to increase diuresis failed and the patient died, about a week after the operation, under uremic and septic symptoms.

Important items pertaining to the genito-urinary tract are:

No break in peritoneum over kidney, and the loose tissue around it shows hemorrhagic infiltration.

Bladder filled with thick creamy pus, ureteral openings normal on both sides; right ureter runs up in normal direction.

Kidney is of horse-shoe variety, whose right pyonephrotic half is drained by an incision, in which is a drainage tube.

There are two renal arteries slightly smaller than normal.

The two adrenals are in normal position.

Death was, according to the autopsy report, due to infection of the loose tissue around the right half of the kidney, recent peritonitis and broncho-pneumonia.

In the presentation of the observations, enumerated above, many diagnostic errors were reported, which occurred in spite of the application of the most modern apparatus at our disposal in the diagnosis of surgical kidney-lesions. It is by the candid report of such errors that our knowledge is materially enhanced and that mistakes in the future can be avoided.

Discussion.

Dr. W. P. Willard: I think one point should be brought out in the diagnosis of nephrolithiasis, and this is the uniformly poor plates we get as a rule of kidneys. The radiographers seem to be content with a plate that oftentimes will not show a renal calculus. I had a case the other day in which I insisted upon two or three plates being taken before the calculus was demonstrated. Then it showed up quite plainly.

I would like to ask Dr. Krotoszyner, with regard to this horseshoe kidney, whether he removed the calculi on both sides through the same incision.

Dr. Julius Rosenstirn: I would like to ask Dr. Krotoszyner whether some of these errors in diagnosis, with regard to stones or calcified mesenteric glands, would not be avoided by the stereoscopic exposure of the X-ray picture. We have for some time been taking such pictures in the Mount Zion Hospital with excellent results, and

have received from them great aid in the accuracy of our diagnosis.

There is no doubt that, with a modern stereoscopic view, a much more definite relative location of shadows can be made, and some of the errors of the kind that were mentioned here to-night might be avoided in the future.

Dr. Krotoszyner, closing discussion: In answer to the first question I wish to state that the horse-shoe kidney was exposed by one large incision in the right loin of the patient. The stones were then removed through two small incisions in the renal parenchyma just large enough to permit of their extraction. If we would have been able to obtain more direct evidence by any of the many methods of examination, including pyelography, applied in this case, we might have been able to make a better preoperative diagnosis and to formulate a more rational operative procedure, and I have reported the case in order to give others a chance to avoid, if possible, similar errors in the future.

I have not had much experience with stereoscopic radiograms, but I do not think that we would have been able, even by this method, to answer the question whether the location of a certain shadow was within or outside the renal parenchyma. The case presented in this connection demonstrates another possibility for a diagnostic error, if we rely solely upon radiography in the diagnosis of renal lithiasis.

PEDIATRIC SITUATION IN EUROPE AND THE EFFECT OF THE WAR ON THE SAME.*

By JOHN ADAMS COLLIVER, A.B., M.D., Los Angeles.

You have asked me to give you a résumé of the pediatric situation in Europe, and the effect of the war on the same. In doing this, I will briefly confine my remarks to my own experience and observation, taking each place in turn, and pointing out the things which to me seem most characteristic.

London: My observation here is confined largely to Great Ormand Street Hospital for Children, and the children's wards in the University Hospital. The Great Ormand Street Hospital has the largest out-patient department of any of the hospitals I have visited in Europe. There is a regular post-graduate school in connection with the hospital, in which you can register in small classes for the out-patient work, or you can become a clerk to an assistant in the out-patient or to the visiting staff of the hospital proper. The clerks are expected to write up the histories and also make physical examinations, and in the hospital to do at least part of the routine laboratory work. The amount of material in the out-patient department is so abundant, and assistants so few, that the examinations are necessarily in most cases somewhat superficial.

In taking the history of a feeding case, little or no attention is paid to the previous diet. You find history after history simply reading, "the child was off its feed." There is seldom any reference to the character of the previous feeding. There is little or no attempt at modification, but a great deal of sodium citrate is used in the milk. The children are practically all of very poor parentage, and convalescents in the hospital among the older children do better on bread with tallow

"drippings," than they do with butter, because they were used to it before.

London has the most poorly dressed, poorly nourished, poverty-stricken children of any of the cities I have ever visited. As a result, they have the greatest number of malnutrition, and later, rachitic cases. The latter exhibited some of the most extreme bony deformities. After seeing so many such cases, I can easily understand why rickets is called "englische krankheit."

In connection with the hospital out-patient department, there is what is called the "Casualty Department." This corresponds to our minor surgical department. Small operations, like removal of tonsils, adenoids, circumcisions, opening abscesses, are performed here. It is here that so many tonsil operations are performed by the Waugh enucleation method. It is rapid, clean, and complete, and with but little hemorrhage. I have seen Mr. T. Babbington Ward do as many as eleven, together with the adenoids, in less than an hour. Mr. Waugh's instrument is used in all these cases, and chloroform was the routine anesthetic.

There is no better place in the world to study rheumatism and its manifestations and complications, than in London. I was a daily visitor, and special student in Drs. Poynton and Still's clinic, and saw many rare rheumatic complications. Dr. Poynton, who has made more of a study of rheumatism in children than any other man in England, and the world perhaps, told me there is more rheumatism in London, than anywhere in England. He has done but little in the last few years on the bacteriology of rheumatism. Nearly all cases start, or are associated with chorea. The nodules, seldom seen in America, are very common. They are so large, that in many cases palpation is unnecessary. You can see them. The most common locality is on the elbows, the spinous processes, and sometimes on the tendons. Many times they stand out like grains of corn under the skin. These, Poynton considers as rheumatism in miniature. They are a bad prognostic sign, and nearly always associated with marked cardiac symptoms, endocarditis.

Closely related to rheumatism, with its characteristic deformity, is Still's disease. More cases are seen here than anywhere in the world. These were practically all in Dr. Still's wards. They were being treated with radium. Sometimes it was thought an improvement was noticed, but it was only transitory, and it was agreed that no marked permanent benefit followed its use.

Other interesting things observed, were a great number of apparently primary pyelitis cases. There was also an epidemic of scarlet fever. I saw a number of rare cerebellar tumors with most interesting and characteristic symptoms operated by Mr. Waugh, with complete recovery.

A very unique feature of the London pediatric relation, was the meeting of the Pediatric Society at the Royal Academy of Medicine. At this meeting, each man presents his case written up in detail, with history, and physical findings. The cases are numbered with large numbers, and

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